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**A REPORT ON WORLD'S TOP 20 UNIVERSITIES WEBSITE  
MARKETING COMMUNICATION STRATEGY: WHAT CAN BE  
EMULATED**

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**Abstract:**

The university website is important as a window for potential students. Its quality is directly associated with the image and reputation of the university, reflecting the level of the university. Therefore, it is vital that a university is able to establish a website that has a high level of usability, functionality, and creativity which can attract and retain the users. In order to have a rational understanding and learning from the experienced university websites, this study has selected the top 20 universities around the world where important elements from their websites are being studied and evaluated thoroughly. The elements include picture resolution, typography, layout, web structure and colour, type of information and content as well as the privacy and trust policy. The study provides important provision on how the world-class universities designed their websites which would potentially yield refinements to the current website of other universities around the globe.

**Keywords:**

Websites; University Marketing; Communication; Marketing; Marketing Strategy

**Introduction**

The media is evolving over the years along with technology development especially with the fast growth of the Internet in the mid to late 1990s which provides a platform for extensive information sharing by communication skills. It gives people the capability to access news and

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other information via the Internet at anytime from anywhere and on any form of digital devices (Heijden, 2003). These days, university websites have turned out to be an important part of lives for prospective students, current students, university staff, faculty, alumni and people around the world to seek information and gain knowledge.

However, most university web servers are still limited to offer only basic digital information, due to the lacking of financial resources, maintenance and supervision efforts even though it is a window for potential students (Bernier et al., 2002). Its quality is directly associated with the image and reputation of the university, reflecting the level of the university. Therefore, it is vital that a university is able to establish a website that has a high level of usability, functionality and creativity which can attract and retain the users.

The purpose of this research will help to discover the strengths of the top 20 universities' websites. The discoveries from the findings might be able to help other university managements to see the significant difference between their websites as compared to those 20 famous universities and keep it on par with those websites. Besides, this research helps to propose improvement measures and suggestions to further enhance the reputation and popularity of other universities around the world where they can increase the usability, functionality and credibility of the web pages.

### **Literature Review**

To measure the strengths of a university's website, some elements need to be explored. Garrett et al., (2017) highlighted that there are seven different elements related to website design including navigation, graphics, organization, content utility, purpose, simplicity and readability. Allison, Hayes, McNulty, & Young, (2019) on the other hand discussed eight website attributes for website evaluation such as usability, content, web design criteria, functionality, appearance, interactivity, satisfaction and loyalty whilst Imlawi (2017) was looking at website responsiveness, perceived control, two-way communication, website usability and information quality in his website success research. However, since this research is focusing on the physical appearance of the websites being studied, the focused were at the five important website elements including (i) dimension and resolution of the pictures, (ii) typography, (iii) layout, web structure and colour, type of information and content and (v) privacy and trust policy as described in the following sections.

#### ***Dimension and Resolution of The Pictures***

The most frequent object displayed on a website is images that improved its aesthetical values (Zhou, 2009). Digital image measured in pixels or the dimension of width and heights of the image (Beal, 2018b). For instance, if an image is zoom in far enough, the image is like a mosaic confined by small tiles, which in photography are called pixels. A pixel itself is a single picture element, and it is the smallest element that a photo can be divided into. A pixel can only be one colour, whereas a photograph is made up of a grid of thousands of pixels, each of different colours that forming the image. Furthermore, the number of pixels across the width and height of the image is called resolution. Therefore, the higher the resolution, the more detail the image is.

Resolution on the other hand refers to the pixel count which is the number of pixels that make up a photo or an image. The resolution can be determined by multiplying the length with the height of the photo. The other type of resolution is concerning how to distribute the total

amount of pixels which is commonly referred as pixel density. In this case, the resolution is expressed in dpi (or ppi), which is the acronym for dots (or pixels) per inch.

### ***Typography***

Web typography is one of the most significant elements for a website as it is an art of designing and arranging different type of fonts, letters, words and paragraphs used to create a fantastic web page. Decent typography of the web helps designers to create effective visual hierarchy and provides good visual punctuation as well as graphic accents. Choosing the right typography for a website is extremely important because it tends to portray the image of an organization. Good typography can create the entire look and feel of a presentation as it helps to attract and holds the audiences' attention, builds recognition, and establishes an information hierarchy.

A font is defined as a design for a set of characters. It is the combination of typeface and other qualities such as the size, style, pitch, and spacing (Beal, 2018a). A font is commonly measured in points often known as pt. that dictates the height of lettering. The sizes are measured as px (pixels) and in pc (pica) in computing. Many sources suggested that 16pt is the commonly used font size for website because of its readability with laptops, desktops and phones (Cho, 2018)

### ***Layout, Web Structure and Colour***

The visual design of a website is influential to the feelings of the web visitors that include the layout and colour (Effendi & Susanto, 2019). A website layout is known as a pattern or framework that defines a website's structure (Raducan, 2018). It is a very critical element that can decide a website's success or failure because of its role of structuring the presentation of important information on a site for both the website's owner and the visitors. A good website layout helps to offer clear navigation to the users and enhance the user's experience while using the website. As stated by the authors, website is a collection of individual linked pages that share a common graphic and navigational look and feel. Individual html pages and how they are designed and linked is the atomic unit of web sites, and everything that characterizes site structure must appear in the page templates.

Page headers are known as a smaller version of the home page that sits atop each page that provides site identity and global navigation, with many tools such as search bar. Users expect to find the "home" link (typically the logo) in the header. As for the scan columns, it is useful to act as the navigation section (particularly in the left column). This section often consists of information such as web search boxes, mailing address and contact information, and other more minor but necessary page elements. The navigation bar is at the left column while the important highlight is placed at the middle column. Lastly, page footers are mostly about housekeeping and legal matters such as page author, copyright statement, contact details, links to related sites and redundant navigation links.

Many popular websites use similar layouts as it is stated that common layouts enable users to work well with them (Babich, 2017). Similar layout helps to create a sense of familiarity with users resulting in visitors spending more time focusing on the content. The top 10 most relevant and popular layouts are single page, split screen, asymmetrical, card, magazine, F pattern, Z pattern, horizontal symmetry, fixed sidebar and boxes.

Colour is known as an influential form of communication tools used by man throughout the history. Colour has strong psychological impact towards the person and the application of appropriate colour towards an organization can help to communicate a brand with its customers. Memory retention and recall can be enhanced through colour especially when it comes to remembering a specific brand or product. People can have emotional response to colour especially with its saturation and brightness.

### ***Type of Information and Content***

The information displayed on the website is extremely vital. It acts as a medium for the public to know more about the organization because it can be used to influence public perception by creating their own story via the website. For a world-class university, the information shown on its website can act as a bridge to connect the stakeholders such as current and prospective students, parents, researchers, alumni, employees and donors.

It is essential to provide basic information such as About Us, Academics, Admissions & Financial Aid, Athletics, Alumni, Student Life, and Offices & Departments. These are the information that needs to be displayed right up front as they reflect the institution's style, reputation, activities, and achievement.

Besides written content, students and parents tend to gravitate towards visual content such as images and videos (Sherwin, 2016). In "The Power of Infographics for Marketing Higher Education" (2014) highlighted that infographic on the education website helps to digest complex information in an easy format with the use of graphics while images and videos will attract visitors' attention, engaging and makes the content more interesting. Thus, the universities must make sure that the desired information are easy for them to find and accessed quickly on their website because time and attention spans of human are limited.

### ***Privacy and Trust Policy***

Frik & Mittone (2019) explained that privacy related practices of e-commerce website have contributed significant impact to the trustworthiness perception of the customers thus impacted the purchase intention of the customers. A privacy policy is a document that clarifies how an organization handles any customer, client or employee information gathered in its operations (Rouse, 2013). It is known as a document that discloses what personal data that the websites collect from the visitors, how they collect it, how they use it and other important details about their privacy practices ("*Sample Privacy Policy Template*," 2018). The purpose of the privacy policy is to inform users of the data collection practices as a way to protect the customer's privacy. Therefore, it is best done with well-structured and clearly written clauses, neatly identified with a descriptive headline. The most common place for a privacy policy link is in the footer section of a website, on each and every page. This would make it accessible to all users, regardless of what web page they are on.

Moreover, it is both legal and ethical requirement to publish a privacy policy on the website because it can protect the organization from many legal liabilities. The three important reasons for a website to include privacy policy are: (1) abiding by the government's law and regulation, (2) required by third party service that a website used and (3) provides visitors with a sense of transparency ("*Sample Privacy Policy Template*," 2018).

The clauses or elements that a website includes in its privacy policy depend on a number of factors including the type of business and the applicable law. However, there are some clauses that just about every website that collects personal information from visitors includes in a Privacy Policy such as key contact information, type of information collected, how the information is processed and shared, use of cookies and tracking, review and make changes to the information, security and enforcement measures and changes to the privacy policy (“Sample Privacy Policy Template,” 2018).

### Methodology

This research begins by identifying important elements in website design from the literatures followed by identifying subjects to be analyzed. Top 20 universities’ websites were selected based on the Times Higher Education (THE) World University Ranking 2019. Table 1 listed the Top 20 universities based on THE World University Ranking 2019 (“Times Higher Education World University Rankings,” 2019). The universities are labelled with alphabet as reference for the analysis presented in the following section.

**Table 1 The Times Higher Education World University Rankings 2019**

No	University	Official website	Label
1 <sup>st</sup>	University of Oxford, UK	<a href="http://www.ox.ac.uk/">http://www.ox.ac.uk/</a>	A
2 <sup>nd</sup>	University of Cambridge, UK	<a href="https://www.cam.ac.uk/">https://www.cam.ac.uk/</a>	B
3 <sup>rd</sup>	Stanford University, US	<a href="https://www.stanford.edu/">https://www.stanford.edu/</a>	C
4 <sup>th</sup>	Massachusetts Institute of Technology, US	<a href="http://www.mit.edu/">www.mit.edu/</a>	D
5 <sup>th</sup>	California Institute of Technology, US	<a href="http://www.caltech.edu/">www.caltech.edu/</a>	E
6 <sup>th</sup>	Harvard University, US	<a href="https://www.harvard.edu/">https://www.harvard.edu/</a>	F
7 <sup>th</sup>	Princeton University, US	<a href="https://www.princeton.edu/">https://www.princeton.edu/</a>	G
8 <sup>th</sup>	Yale University, US	<a href="https://www.yale.edu/">https://www.yale.edu/</a>	H
9 <sup>th</sup>	Imperial College London, UK	<a href="https://www.imperial.ac.uk/">https://www.imperial.ac.uk/</a>	I
10 <sup>th</sup>	University of Chicago, US	<a href="https://www.uchicago.edu/">https://www.uchicago.edu/</a>	J
11 <sup>th</sup>	ETH Zurich, Switzerland	<a href="https://www.ethz.ch/en.html">https://www.ethz.ch/en.html</a>	K
12 <sup>th</sup>	Johns Hopkins University, US	<a href="https://www.jhu.edu/">https://www.jhu.edu/</a>	L
12 <sup>th</sup>	University of Pennsylvania, US	<a href="https://www.upenn.edu/">https://www.upenn.edu/</a>	M
14 <sup>th</sup>	UCL, UK	<a href="https://www.ucl.ac.uk/">https://www.ucl.ac.uk/</a>	N
15 <sup>th</sup>	University of California, Berkeley, US	<a href="https://www.berkeley.edu/">https://www.berkeley.edu/</a>	O
16 <sup>th</sup>	Columbia University, US	<a href="https://www.columbia.edu/">https://www.columbia.edu/</a>	P
17 <sup>th</sup>	University of California, Los Angeles, US	<a href="http://www.ucla.edu/">www.ucla.edu/</a>	Q
18 <sup>th</sup>	Duke University, US	<a href="https://www.duke.edu/">https://www.duke.edu/</a>	R
19 <sup>th</sup>	Cornell University, US	<a href="https://www.cornell.edu/">https://www.cornell.edu/</a>	S
20 <sup>th</sup>	University of Michigan, US	<a href="https://umich.edu/">https://umich.edu/</a>	T

An analysis has been carried out as a way to compare and evaluate several elements between the websites of the 20 universities. The elements include picture resolution, typography, layout, web structure & colour, type of information & content and lastly the privacy & trust policy.

### Findings and Discussion

The data collected from the THE top 20 universities' websites have been summarized and tabulated in the following section based on every element discussed in literature review.

#### *Dimension and Resolution of The Pictures*

The dimension of a picture is made up of width times by height. Thus, for a more effective presentation of the collected data, the pictures' dimension recorded from each of the top 20 universities website has been grouped in range form such as 100-300 pixels, 301-500 pixels and 501-700 pixels.

Based on the analysis, the most common width range used by the top 20 universities website in the world was 100 pixels to 300 pixels with the frequency of 10 or 50%. The second highest width range used would be from 301 pixels to 500 pixels with the frequency of 9 or 45% among the total of 20 universities website. Besides, 40% or 9 universities website also used pictures with width range from 901 pixels to 1100 pixels in their website's main page. Table 2 summarized the width range of the selected university websites.

**Table 2 Width Range**

Width Range (pixels)	Universities	F	%
100-300	B, E, I, J, K, M, P, Q, R, T	10	50
301-500	A, B, C, I, J, O, R, S, T	9	45
501-700	F, G, H, M, S	5	25
701-900	B, H, L, N, O	5	25
901-1100	D, E, F, G, I, J, K, R	8	40
1101-1300	F, G,	2	10
1301-1500	C, I, J, K	4	20
1501-1700	A, K,	2	10
1701-1900	None	None	None
1901-2100	Q	1	5

As for the picture height range, the highest frequency will be starting from 101 pixels to 200 pixels. A total of 10 or 50% of the university website has chosen to use pictures within this height range. The analysis showed that pictures with a height range between 301 pixels to 400 pixels were used by 9 or 45% of the university website. Both pictures with height range between 201 pixels to 300 pixels and 501 pixels to 600 pixels were used by 40% or 8 university websites according to the analysis. Table 3 summarizes the Height range of the selected websites.

**Table 3 Height Range**

Height Range (pixels)	Universities	F	%
1-100	A	1	5
101-200	B, C, E, I, J, K, M, P, Q, T	10	50
201-300	A, E, I, J, M, P, R, S	8	40
301-400	B, F, G, H, I, O, R, S, T	9	45

401-500	K, N, O	3	15
501-600	A, F, G, H, I, J, M, T	8	40
601-700	D, F, G, I, J, S	6	30
701-800	K	1	5
801-900	F, Q	2	10
901-1000	None	None	None
1001-1100	C, R	2	10

In terms of the resolution, pictures with 96 dpi were used by 16 or 80% of the university's website. It has the highest frequency as compared to other resolution. Meanwhile, 6 or 30% of the universities have decided to use pictures with resolution of 72 dpi in their website as it is one of the most commonly used resolutions on the web. Lastly, a total of 4 or 20% top universities websites have used pictures with resolution of 300 dpi. The summary of the top 20 universities website resolutions is shown in Table 4.

**Table 4 Horizontal & Vertical Resolution (dpi)**

Horizontal & Vertical Resolution (dpi)	Universities	F	%
1	I	1	5
72	C, E, F, H, M, T	6	30
96	A, B, C, D, F, G, I, J, K, L, N, O, P, Q, R, S	16	80
240	T	1	5
300	F, I, O, S	4	20

  

Horizontal & Vertical Resolution (dpi)	Universities	F	%
1	I	1	5
72	C, E, F, H, M, T	6	30
96	A, B, C, D, F, G, I, J, K, L, N, O, P, Q, R, S	16	80
240	T	1	5
300	F, I, O, S	4	20

Note: \*F= Frequency %=Percentage

### **Typography**

In term of typefaces, it showed that sans-serif was used by 17 or 85% of the universities website among the top 20 universities website in the world. Sans-serif dominates many websites over the years because it tends to display better on lower resolution display. They regularly used to express simplicity and modernity because it does not have extending features called 'serifs' at the end of strokes. From the analysis, it also indicated that 9 or 45% universities used Arial in their website. Arial is often known as one of the most popular typefaces on the internet. Besides, Helvetica Neue and Helvetica were used by 7 or 35% of the universities in their official website. The summary of the typefaces of the top 20 best universities websites are shown in Table 5.

**Table 5 Typefaces**

Typeface	Universities	F	%
Helvetica Neue	A, C, G, I, J, N, R	7	35
Arial	A,B, C, G, I, J, K, N, R	9	45
Helvetica sans-serif	A, B, C, G, J, K, R	7	35
serif	A, C, D, E, G, H, I, J, K, L, N, O, P, Q, R, S, T	17	85
Open-sans	E, F,	2	10
Proxima- nova	M, O,	2	10
	P, Q, R	3	15

Out of the top 20 websites, the highest frequency of font size used is 16pt. A total of 70% or 14 universities have used font size 16pt for the main body text. This size is said to be moderate that can help improve the paragraph's readability for the website visitors. Other than that, font size of 14pt is also popular in which 13 or 65% of universities have applied this size on their website in order to display useful information for the visitors. Lastly, font size of 18pt was used by 10 or 50% of the universities website as shown in Table 6.

**Table 6 Font Size**

Font Size (pt)	University	F	%
12	B, K, M, S	4	20
13	A, O, R, S	4	20
14	D, E, H, I, K, L, M, N, O, P, Q, R, T	13	65
15	E, G, I, J, O, Q, R	7	35
16	A, B, C, D, E, G, H, J, N, P, Q, R, S, T	14	70
18	B, D, E, F, J, M, N, P, Q, S	10	50
20	C, G, H, O, R, T	6	30
24	C, F, H, J, L, M, O, T	8	40
26	B, C, N	3	15
30	G, H, I, M, Q, R, T	7	35

In terms of font colour, the most common colour selected by the web designers will be both black and white colour. A total of 17 or 85% of the universities have applied black and white font colour in their website. These two colours are important for universal design because they are easier to read for most people. To enhance visual functioning, light colour font such as white colour require a dark background while dark colour font such as black will need a white background for effective readability of the visitors. Table 7 presented the summary of the font colour being used in the top 20 universities website.

**Table 7 Font Colour**

Font Colour	University	F	%
Black	B, C, D, E, F, G, H, I, K, L, M, N, O, P, Q, R, S	17	85
Grey	A, E, F, J, T	5	25
Blue	A, B, C, H, K, M, N, O, P, Q, R, S, T	13	65
White	A, B, C, E, F, G, H, I, J, K, L, M, N, O, P, S, T	17	85
Red	C, D, E, F, J, R, S	7	35
Yellow	C, N, Q, T	4	20



Orange	E	1	5
Brown	L	1	5

Lastly, the font style used by the top 20 universities website consist of normal, italic, bold, and bold italic. University of Oxford, University of Cambridge and Stanford University have included all four-font style in designing their website. A total of 16 universities have used both normal and italic font in their main body text. Commonly, bold was used for the title of a topic while normal font style was used for the contents for a better contrast. As for italic, it is a cursive font that used to emphasise important information such as date and name. However, only 5 websites have included this font style according to the analysis. Lastly, Princeton University, University of Chicago and University of Pennsylvania only used normal font in their website for simplicity purposes.

### ***Layout, Web Structure and Colour***

Table 8 and Table 9 summarised the analysis on website layout of the top 20 universities. From Table 8, it is found that 15 or 75% of the universities have placed “home link” at the left side of the websites’ main page header. Home link (Logo or Name) is known as the important element that allows visitors to always link back to the home page each time after the visitors have accessed to other pages. According to the analysis, John Hopkins University was the only university that do not include any “home link” in their website’s main page. As for the “navigation” of the website, 8 or 40% of the universities have placed it in the middle of their website. Moreover, only 2 or 10% universities have placed the navigation bar on the right side while 5 or 25% of the universities do not include it in their website’s header.

All of the universities have included a search bar on their website according to the analysis. It is important to add a search bar on the website because it allows users to look for what they want quicker and easier while narrow down their search result as a way to enhance users’ experience. According to the analysis, it is found that a total of 14 or 70% of the universities have positioned the search bar on the right, 4 or 20% on the left and 2 or 10% in the middle of their website’s main page. Lastly, 9 or 45% of the universities do not have scan column on their official website. According to the analysis, there are 7 or 35% of the universities have placed the scan column on the right side while 4 or 20% of the universities placed it on the left side of their website.

**Table 8 Top 20 Universities’ Website Layout (Header)**

Header	Left	F	%	Middle	F	%
Home Link	A, B, C, D, E, G, H, I, K, M, O, P, Q, S & T	15	75	F, J & R	3	15
Navigation	B, F, I, K & P	5	25	D, E, H, J, Q, R, S & T	8	40
Search Bar	C, K, L, M	4	20	B & E	2	10
Scan Column	C, L, M & N	4	20	-	-	-
Header	Right	F	%	None	F	%
Home Link	N	1	5	L	1	5
Navigation	G & O	2	10	A, C, L, M & N	5	25

Search	A, D, F, G, H, I, J, N, O, P, Q, R,	14	70	-	-	-
Column	S & T					
Scan Column	A, B, E, G, H, I & K	7	35	D, F, J O,	9	45
				P, Q, R, S		
				& T		

Based on the findings in Table 9, not all universities have included “more information”, “copyright” and “quick link” in their website’s main page footer. However, some of the information can be found through the use of search bar on the website header. Throughout the analysis, it is found that these elements are placed at different position by the universities. For instance, 8 or 40% of the universities have positioned “more information” in the middle of the footer, while 7 or 35% of the universities placed it at the left side and 2 or 10% of the universities placed it on the right side instead. As for “copyright”, 10 or 50% of the top 20 universities’ website have actually placed it on the left side. Besides, a total of 5 or 25% of the universities have placed it in the middle while 2 or 20% of the universities placed it on the right side of their web page.

An overall of 10 or 50% of the universities does not include “quick links” that can direct visitors to another related website on the main page. Thus, it can be concluded that it is the least important element to be included in a website’s main page. However, placing “quick links” in the middle of the main page’s footer have a higher frequency (5 out of 20 universities) as compared to other position. According to the analysis, the most important element to be added will be the contact methods such as social media (Twitter, Instagram, Facebook and LinkedIn), phone number and address as they are visible on all the universities’ main page footer. A total of 8 or 40% of the universities have placed them in the middle while 6 or 30% of the universities placed them on the left and right side instead.

**Table 9 Top 20 Universities’ Website Layout (Footer)**

Footer	Left	F	%	Middle	F	%
More info	A, H, I, J, L, N & S	7	35	C, D, F, G, M, P, Q & R	8	40
Copyright	A, B, F, H, I, K, N, O, Q & T	10	50	C, E, J, M & S	5	25
Contact	B, D, F, L, N & O	6	30	C, E, G, I, M, Q, R & T	8	40
Quick Links	B, H & I	3	15	C, D, F, M & R	5	25
Footer	Right	F	%	None	F	%
More info	B & O	2	10	E, K & T	3	15
Copyright	G & P	2	10	D, L & R	3	15
Contact	A, R, J, K, P & S	6	30	-	-	-
Quick Links	A & J	2	10	E, G, K, L, N, O, P, Q, S & T	10	50

As shown in Table 10, layout such as card-based design is the most popular where it was used by half of the top 20 universities. Card-based design allows users to scan through the content quickly and easily and easier to rearrange information in the website. The second most popular layouts are magazine-based design and boxes-based design where both are used by 3 or 15% of the universities. Moreover, 2 universities such as Stanford University and Duke University

have chosen fixed sidebar as their website's layout. According to the analysis, it is found that only Massachusetts Institute of Technology and University of Chicago has used asymmetrical layout and horizontal symmetry respectively when designing their official website.

**Table 10 Layout Design Used by Top 20 Universities**

Layout design	University	F	%
Card	A, E, F, H I, K, M, O, P & S	10	50
Magazine	B, G, & N	3	15
Fixed Sidebar	C & R	2	10
Asymmetrical	D	1	5
Horizontal Symmetry	J	1	5
Boxes	L, Q & T	3	15

As shown in Table 11, majority of the websites have chosen blue colour as their website's primary colour. Out of the top 20 universities, 12 or 60% of the universities website have used blue colour as their primary colour. As stated by Patel (2018) the safest colour scheme is blue as 57% of men and 35% of women declared that blue was their favourite colour. Moreover, 5 or 25% of the universities' website have applied red colour as their primary colour to increase visitors' engagement. Orange colour was used by 2 or 10% of the universities' website which include California Institute of Technology and Princeton University. Other than that, UCL was the only university that has chosen black colour as its website's primary brand colour.

**Table 11 Primary Colour Applied by The Top 20 Universities' Website**

Colours	University	F	%
Blue	A, B, H, I, K, L, M, O, P, Q, R & T	12	60
Red	C, D, F, J & S	5	25
Orange	E, G	2	10
Black	N	1	5

### ***Type of Information and Content***

Based on the analysis, it was found that all of the top 20 universities have incorporated images on their website's home page as a way to share information with the audiences. In order to make the website more compelling, there are a total of 11 or 55% of the universities have used video in their website. Infographics can be considered as the least popular visual content because only 5 out of 20 universities have used them in their official website. The summary of the findings related to the visual content are as shown in Table 12.

Throughout the analysis, it shows that all of the university has incorporated content such as "About us", "Alumni", and "Event and news" in their website's main page. Excluding UCL, 95% of the universities have included "Academic" in their website's home page as it allowed visitors to view on the courses and programs offered by the university. "Research and achievement" is also one of the most popular content as 18 out of 20 or 90% of the universities' website have added it in the navigation bar. Moreover, 17 or 85% of the universities have included "Admissions" and "Support services" in their website's main page navigation bar.

As for the net price calculator, the majority of the universities (18 universities) have indeed included it on their website. Besides Duke University, other 17 universities do not place the tools in the main page in which the visitors will have to search for it from the financial aid page

or the search bar. Only Duke University has placed it on the website main page where visitors can click on it right away. However, the University of Cambridge and UCL do not have this gadget on their websites. Table 13 summarised the type of information on the websites.

**Table 12 Visual Content Used by The Top 20 Universities Website's Main Page**

Visual Content	University	F	%
Image	All	20	100
Video	A, B, E, F, G, I, J, L, N, R & S	11	55
Infographic	E, J, K, L & S	5	25

**Table 13 Information Available on The University Website's Main Page**

Information	Available on the main page of the university's website	F	%
About/ About Us	All available	20	100
Academics	Except for N	19	95
Admissions	Except for B, N & T	17	85
Financial Aid	Except for A, B, F, N, P, Q & T	13	65
Alumni	All available	20	100
Student Life	Except for F, K, N & R	16	80
Offices & Departments	Except for D, G, H, K, Q & T	14	70
Net price calculator	- Only R - None were found for B & N	1	5
Employment opportunities	Only K	1	5
Support Services	Except for D, M & T	17	85
Research and achievement	Except for D & F	18	90
Events and news	All available	20	100

### ***Privacy and Trust Policy***

According to the analysis, there are a total of five universities who do not include the privacy policy in the main page of their official website. This includes University of Cambridge, University of Chicago, John Hopkins University, Columbia University and University of Michigan. Visitors will have to key in "privacy policy" in the search bar in order to access to the privacy policy.

Among those 5 universities, it was found that John Hopkins University and Columbia University do not have a proper privacy policy in their official website. This means that the policy statement cannot be found directly from their main website. However, the privacy policy can be found from the websites of the universities' other campuses or schools. For example, each of the schools (School of Medicine or School of Engineering) in John Hopkins University has their own website and privacy policies that are dedicated to their school's website visitors only.

Table 14 highlighted the clauses or elements that are normally being included in a website's privacy policy. Among the top 20 universities, a total of 18 or 90% of the universities have added "use of cookies and tracking" as part of their clauses in the privacy policy in order to

instill trust in their visitors towards their website. According to the analysis, clauses such as “key contact information” and “how the collected information is processed and shared” are being included in the privacy policy by 17 or 85% of the universities. Furthermore, “type of information collected” and “changes to the privacy policy” also being added into the privacy policy by 16 or 80% of the universities respectively.

**Table 14 Clauses or Elements Included in The Top 20 Universities’ Privacy Policy**

Clauses/ Elements	University that does not include in their privacy policy	F	%
Key contact information	F, L and P	17	85
Type of information collected	J, K, L and P	16	80
How the collected information is processed and shared	K, L and P	17	85
Use of cookies and tracking	L and P	18	90
Review and make changes to the information	F, G, H, J, K, L, O, P and T	11	55
Security and enforcement measures	K, L, O, P, R and T	14	70
Changes to the privacy policy	H, L, P and S	16	80

## Conclusion

This research provides important direction for other universities around the globe to learn from world-class universities on how they manage and present their websites to the visitors. Besides, it can also serve for the purpose of determining the elements or criteria for a university to build an attractive, functionally and successful website.

It is very important to optimise the website loading time since visitors are expecting short loading speed (Garett et al., 2017). Therefore, it is suggested that the dimension of the images used must not be too large as it can affect the loading speed for a website which will lead to user frustration. It is important to ensure the images a website delivers perfectly fit the website required dimension. It is suggested that the same image should be made into different sized thumbnails to fit different pages rather than deliver a large image and rely on the browser to resize it which will definitely affect the loading speed.

Moreover, a website is being viewed by various devices by the people especially the huge rise in mobile and tablet users in recent years. Thus, it is recommended that other universities should take note of this phenomenon and make sure that the same image content can be viewed in mobile devices without compromising the image resolution. Many websites will offer the same exact image across all device resolutions, depending on client-side resizing for the image. This will lead to the users wasting time loading unnecessarily large image on their devices.

Similarly, with other world top universities, it is important for other universities to incorporate Arial and sans-serif in their main page while displaying important information and content. As discussed earlier, Arial is known as the most popular typefaces used on the websites while 17

or 85% of the world top universities has used san-serif in their website as well. The used of proper font sizes and colours help to create a sense of professionalism that can elevate the impression of the visitors towards their own universities.

In order to increase the image and reputation, it is crucial for universities around the globe to design a web page with high efficiency, usability and creativity. The first-time visitor receives a favourable impression from a university offering attractive web pages. Thus, it is proposed that other universities should always include navigation bar and placed it right in the middle of the website header because it enables visitors to speed up the search process as they do not have the time to figure out how a website works. A handy navigation bar is especially useful for mobile devices users because they do not have to scroll back to the top while searching for what they want to see. It is proven that search bar is one of the most important components because 14 or 70% of the top 20 university had placed it right at the header. This helps to increase usability and enhance visitors experience while browsing through the web pages. It allows visitors to search content by specifying keywords or phrases without navigating through the entire website structure.

According to the study, majority of the top universities included “more information” on the footer which allows visitors to explore more. Hence, it is vital to take this element into account by adding information such as strategic plan, universities’ research, library, funding, sports, clubs and society, and media into the main page. These allow users to click on information they wanted or do not realise that they wanted quickly while keeping the university website appears to be clean and simple. Presenting other information on the footer can reduce the problem such as overloaded, crowded and busy home page which may turn visitors away.

For an educational website, it is suggested that those websites can incorporate blue colour in the background because the blue colour is known to create a sense of authority, credibility and trust as well as giving positive emotional impacts (Nordeborn, 2013). The findings shown that blue colour is very popular among educational websites where it has been used by 60% of the top university website. The up-to-date information and content display on university web pages is vital because it strongly related to the quality of the services a website offers via the Internet, and its well-crafted position helps to achieve this positive image. The majority of the world-class universities have added student life, university’s offices and departments and support services in the main page in their website because it serves as a medium for prospective and new students to understand and get to know the university faster.

It is recommended that other universities can add a net cost calculator on the main page as it allows visitors especially new and potential students or parents to discover what higher education might actually cost them such as tuition, room and board, and other expenses. This particular tool can be really helpful for students to estimate the cost needed before deciding to study at a university or college. Additionally, video content can make the website to become more eye-catching and interactive. Thus, it is advisable to use more video content on the websites because video ‘first impression’ is the key to attract prospective students for an education institution. Other contents such as student life, testimonials, university tour, important news, achievement and research results can also be presented in the form of videos.

Lastly, it is important for all universities to include a privacy policy that is accurate, details and easy to understand where most of the important elements are being covered and explain to the visitors on their websites.

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